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OFFICE OF  
ENGINEERING  
AND TECHNOLOGY

July 19, 1994



Mr. Tom Stanley  
Federal Communications Commission  
2025 M Street, N. W.  
Washington, D. C. 20554

Dear Mr. Stanley:

AED  
DOCKET FILE COPY ORIGINAL

This should be 93-61  
put in the RM-8013  
AVM docket

+  
in the record  
on the Western Multiplex  
petition  
TDR 7/27/94

There are two matters currently before the FCC that I would like to comment on and to make a two-bird, one-stone suggestion that you may find useful. PR Docket 93-61, pertaining to permanent frequency allocations for AVM/LMS has not surprisingly created a mild stir in the Part 15 community. Separately, Western Multiplex Corporation has filed a petition for rulemaking and request for immediate waiver asking that the antenna gain restrictions imposed by Part 15.247 (6 dBi with a 1-watt transmitter) be lifted in the 2.4 and 5.7 GHz spread spectrum (ISM) bands. We join Western Multiplex in asking that the requested waiver be granted and that a rulemaking be initiated. By this action, the Commission would encourage long-haul, outdoor, point-to-point spread spectrum data links to locate in the 2.4 and 5.7 GHz bands, eliminating a potential source of harmful interference to 900 MHz AVM/LMS.

Digital Wireless Corporation

Digital Wireless Corporation, founded in 1987, is a developer and manufacturer of spread spectrum, OEM telemetry devices for industry. We participated in the fine tuning of Part 15.247 that took place in 1990 and have an interest in regulatory actions affecting the unlicensed spread spectrum bands.

#### AVM/LMS vs. Spread Spectrum

Will AVM/LMS impact Part 15 spread spectrum systems? Undoubtedly. The 300-watt AVM/LMS base stations are likely to jam many of the 900-MHz spread spectrum receivers within a 1/4-mile radius regardless of channel or frequency, while on-channel interference will extend several miles. Will spread spectrum interfere with AVM/LMS? Yes. AVM/LMS will experience an increasing level of interference from Part 15 spread spectrum systems as both proliferate. AVM/LMS has hyperinflated its claims of spread spectrum product shipments. All of us in the spread spectrum industry wish they were true. When interference to AVM/LMS comes from spread spectrum consumer products such as cordless phones, the statutory protection that may be afforded AVM/LMS will be somewhat toothless. This should be a significant business issue to AVM/LMS, but the Commission may wish to consider the practical enforceability of giving AVM/LMS priority over spread spectrum.

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## Long-Haul Spread Spectrum

The spread spectrum point-to-point data links that are on the market fulfill an important need in telecommunications: They allow immediate installation of high-speed data links over long distances without the installation delays associated with frequency-coordinated, licensed microwave links or buried fiber. No other technology can so aptly cater to the whims and impulsive demands of the cellular and PCS industries. Spread spectrum links can be set up almost immediately while obtaining licensed microwave spectrum or burying a fiber link may take months

Most of the long-range spread spectrum links that are in place today operate in the 2.4 and 5.7 GHz spread spectrum bands. At these higher frequencies, there is less interference and high-directivity antennas are smaller. The high-directivity antennas, which typically have beamwidths on the order of five degrees, contribute to the performance of these systems but also minimize cross-interference to other systems.

### In Conclusion

By lifting the antenna gain restrictions of FCC Part 15.247(b) in the 2.4 and 5.7 GHz bands, the Commission would encourage a beneficial stratification in the ISM or spread spectrum bands: low-cost, low-utilization products to the 900 MHz band, higher utilization products to the upper bands. We are all aware of the whining, Part 15 fringe element that insists on having unrestricted and exclusive use of the 900 MHz band. One is reminded of semanticist S. I. Hayakawa's quip about the Panama Canal, "We stole it fair and square and I think we should keep it." To AVM/LMS, I say let them come. Market forces will sort it all out.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Stuckey McIntosh', with a large, stylized initial 'P' and a long, sweeping horizontal stroke.

P. Stuckey McIntosh  
Chairman

cc: John Reed, Mike Marcus